APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,140	12/29/2000	Edward N. George	TI-31481	6785

7590 01/12/2005		EXAMINER
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ART UNIT	PAPER NUMBER
2661	

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/750,140	GEORGE, EDWARD N.
	Examiner	Art Unit
	Anthony T Ton	2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>20 July 2004</u>.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-17</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-17</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>20 July 2004</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

       1. ☐ Certified copies of the priority documents have been received.

       2. ☐ Certified copies of the priority documents have been received in Application No. _____.

       3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
         application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

PHIRIN SAM
PRIMARY EXAMINER

Attachment(s)	
1) ☒ Notice of References Cited (PTO-892)	4) ☐ Interview Summary (PTO-413)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)	5) ☐ Notice of Informal Patent Application (PTO-152)
Paper No(s)/Mail Date _____ .	6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   **Claims 1-3, 5, 7-12** and **14-17** are rejected under 35 U.S.C. 103(a) as being unpatentable

over *Verreault* (US Patent No. **6,434,169**) in view of *Sullivan et al.* (US Patent No. **6,667,986**)

hereinafter referred to as *Sullivan,* and in view of *Chen et al.* (US Patent No. **5,822,524**)

hereinafter referred to as *Chen.*

        a) **In Regarding to Claim 1**: *Verreault* disclosed a system for transmitting data between

a first modem and a second modem across a communication network with reduced bandwidth

and improved resistance to network packet loss *(see Fig.4)*, comprising:

        a first processor for connection between said first modem and a first side of said network

(see Fig.5: V.32 BIS State Machine; Fig.6: DSP CALL; and col.5 lines 29-30: TM320C551 DSP)

for:

                providing a local interface to said first modem *(see Fig.5: block of linear input*

buffers);

                demodulating a full duplex data stream from said first modem into bits *(see col.17*

lines 44-52: full duplex exchange, demodulate);

                packetizing the bits into packets for transport over said packet network *(see Fig.5:*

block packetizer); and

remodulating the full duplex data stream from a remote end *(see Fig.5: block*

modulator; and see col.6 lines 54-55: data is modulated. In which, when a data packet is

received from the far-side modem relay unit (the one that is on the right side of "data" in

Fig.4), then the data packet is modulated (re-modulated) and sent to a local modem that

connected to the first-end data device (the one that is on the leftmost in Fig.4)), and

a second processor for connection between said second modem and a second side of said

network *(see Fig.5: V.32 BIS State Machine; Fig.7: DSP ANS; and col.5 lines 29-30:*

TM320C551 DSP) for:

providing a local interface to said second modem *(see Fig.5: block of linear input*

buffers);

demodulating the full duplex data stream from said second modem into bits *(see*

col.17 lines 44-52: full duplex exchange, demodulate);

packetizing the bits into packets for transport over said packet network *(see Fig.5:*

block packetizer); and

remodulating the full duplex data stream from said first side *(see Fig.5: block*

modulator; and see col.6 lines 54-55: data is modulated. In which, when a data packet is

received from the original-side modem relay unit (the one that is on the left side of

"data" in Fig.4), then the data packet is modulated (re-modulated) and sent to a local

modem that connected to the far-end data device (the one that is on the rightmost in

Fig.4)).

Verreault failed to explicitly disclose the communication network is a packet network.

However, *Verreault* clearly disclosed packets that relate to a data network, in which, packets can

be transmitted by a first-side modem relay unit across a data medium to a far-side modem relay

unit as shown in Figs.4 and 5. Therefore, it would be obvious on the disclosure of *Verreault*

related to this subject matter of the instant claim.

Sullivan explicitly disclosed a packet network that is used to provide high speed data

access using a distributed modem *(see Figs1 and 5: block 20 (local modem) and block 40*

(distributed modem – the modem relay unit as disclosed by the applicant) shown in Fig.1; and

block 150 shown in Fig.5 represents for the packet data network as disclosed by the applicant).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to

implement such a packet network, as taught by *Sullivan* with *Verreault,* so that a voice can be

sent across such a packet network. The motivation for doing so would have been to support

different data rates and save bandwidth or bandwidth optimization *(see Sullivan: abstract).*

Therefore, it would have been obvious to combine *Sullivan* with *Verreault* in the invention as

specified in the claim.

Verreault also failed to explicitly disclose wherein said packets include redundant data

upon the network packet loss.

Chen explicitly disclosed said packets include redundant data upon the network packet

loss *(see Fig.3: list of lost packets; and col.7 lines 24-45: wherein the sequence number of a*

packet loss is redundant data).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to

implement such packets include redundant data upon the network packet loss, as taught by *Chen*

with *Verreault,* in a purpose of detecting lost packets in a communications network. The

motivation for doing so would have been to provide efficiency and reliability in the transmission

and display of multimedia files *(see Chen: col.7 lines 63-65).* Therefore, it would have been

obvious to combine *Chen* with *Verreault* in the invention as specified in the claim.

b) **In Regarding to Claim 2**: *Verreault* further disclosed the system further comprising:

means for establishing optimal modulation and rate parameters for communication

between said first and second modems *(see Fig.5: blocks "Network RX Queues", "Rate*

Controller", and "Modem Controller & Sinodem Access"; and see Table 1 in col.6: Optimal

Queue size of the modem controller).

c) **In Regarding to Claim 3**: *Verreault* further disclosed said means for establishing

optimal modulation and rate parameters includes the exchange of signaling messages to

determine the best commonly supported data rate *(see col.7 line 47-col8.line 6: signaling*

message; and see Claim 13 in col.54: data rates supported).

d) **In Regarding to Claim 5**: *Verreault* disclosed a system wherein an originating

modem terminal equipment connects to a digital network via an originating modem relay unit

and wherein a destination modem terminal equipment connects to the digital network via a

destination modem relay unit *(see Fig.4)*, a method of providing modem communications

comprising:

the originating modem terminating equipment sending digital data to the destination

modem terminating equipment via the originating modem relay unit and the destination modem

relay unit *(see Fig.4: Data Device on the left side sending data to destination Data Device on the*

right via modem relay units locate on the left and right of the "data" medium);

the originating modem relay unit sending the digital data to the destination modem relay

unit *(see Fig.5: in which, demodulated data is packetized and sent to the destination modem*

relay unit throughout the block of network transmit); and

while the destination modem relay unit is waiting for the digital data from the originating

modem terminating equipment, the destination modem relay unit maintaining communication

with the destination modem terminating equipment to prevent protocol timeouts of the

destination modem terminating equipment *(see col.2 line 63-col.3 line 3: its counterpart modem*

relay (destination relay unit) in order to negotiate compatible data transmission conditions; and

see col.10 lines 1-9: performs the state sanity timeout verification).

Verreault failed to explicitly disclose the communication network is a digital network.

However, *Verreault* clearly disclosed packets that relate to a data network, in which, packets can

be transmitted by a first-side modem relay unit across a data medium to a far-side modem relay

unit as shown in Figs.4 and 5. Therefore, it would be obvious on the disclosure of *Verreault*

related to this subject matter of the instant claim.

Sullivan explicitly disclosed a digital network that is used to provide high speed data

access using a distributed modem *(see Figs1 and 5: block 20 (local modem), block 40*

(distributed modem – the modem relay unit as disclosed by the applicant), and digital data path

16 shown in Fig.1; and block 150 shown in Fig.5 represents for the packet data network as

disclosed by the applicant).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to

implement such a digital network, as taught by *Sullivan* with *Verreault,* so that a voice can be

converted into digital and then sent across a digital network. The motivation for doing so would

have been to support different data rates and save bandwidth because of voice compression

techniques *(see Sullivan: abstract)*. Therefore, it would have been obvious to combine *Sullivan*

with *Verreault* in the invention as specified in the claim.

e) **In Regarding to Claims 7** and **9**: *Verreault* disclosed a system wherein an originating

modem terminal equipment connects to a digital network via an originating modem relay unit

and wherein a destination modem terminating equipment connects to the digital network via a

destination modem relay unit *(see Fig.4)*, a method of receiving a modem communication from

the destination modem relay unit comprising:

receiving digital data from the originating modem terminating equipment *(see Fig.4: in*

which, data is being sent from the Data Device on the left (the originating modem terminating

equipment) to the to destination Data Device on the right via modem relay units locate on the left

and right of the "data" medium); and

while waiting for the digital data from the originating modem terminating equipment,

maintaining communication with the destination modem terminating equipment to prevent

protocol timeouts of the destination modem terminating equipment *(see col.2 line 63-col.3 line*

3: its counterpart modem relay (destination relay unit) in order to negotiate compatible data

transmission conditions; and see col.10 lines 1-9: performs the state sanity timeout verification).

Verreault failed to explicitly disclose the communication network is a digital network as

set forth in Claim 7 and the network is of unknown and unpredictable delay as set forth in Claim

9. However, *Verreault* clearly disclosed packets that relate to a data network, in which, packets

can be transmitted by a first-side modem relay unit across a data medium to a far-side modem

relay unit as shown in Figs.4 and 5. Therefore, it would be obvious on the disclosure of Verreault related to this subject matter of the instant claims.

Sullivan explicitly disclosed a network that is used to provide high speed data access using a distributed modem *(see Figs1 and 5: block 20 (local modem), block 40 (distributed modem – the modem relay unit as disclosed by the applicant), and digital data path 16 shown in Fig.1; and block 150 shown in Fig.5 represents for the packet data network as disclosed by the applicant in instant claims because in a data packet network, packets can be experienced many unpredictable problems such as delay, loss or error since connection failures or processing time).*

At the time of the invention, it would be obvious to a person of ordinary skill in the art to implement such a digital network, as taught by *Sullivan* with *Verreault,* so that a voice can be converted into digital and then sent across a digital network. The motivation for doing so would have been to support different data rates and save bandwidth because of voice compression techniques *(see Sullivan: abstract).* Therefore, it would have been obvious to combine *Sullivan* with *Verreault* in the invention as specified in the claims.

f) **In Regarding to Claim 8**: this claim is rejected for the same reasons as claim 7 because the apparatus in claim 7 can be used to practice the method steps of claim 8.

g) **In Regarding to Claims 10-12**: these claims are rejected for the same reasons as claims 1-3, respectively because the apparatus in claims 1-3 can be used to practice the method steps of claims 10-12.

h) **In Regarding to Claim 14**: *Verreault* disclosed all aspects of this claim as set forth in Claim 10.

Verreault failed to explicitly disclose wherein said providing redundant data in a packet follows a first series of data packets in which at least one said first series of data packet is lost across said packet network.

Chen explicitly disclosed such providing redundant data in a packet follows a first series of data packets in which at least one said first series of data packet is lost across said packet network *(see Fig.3: list of lost packets; and col.7 lines 24-45: wherein a list of lost packets would be transmitted after a number of transmission packets)*.

At the time of the invention, it would be obvious to a person of ordinary skill in the art to implement such said providing redundant data in a packet follows a first series of data packets in which at least one said first series of data packet is lost across said packet network, as taught by *Chen* with *Verreault,* in a purpose of detecting lost packets in a communications network. The motivation for doing so would have been to provide efficiency and reliability in the transmission and display of multimedia files *(see Chen: col.7 lines 63-65)*. Therefore, it would have been obvious to combine *Chen* with *Verreault* in the invention as specified in the claim.

i) **In Regarding to Claim 15**: *Verreault* disclosed all aspects of this claim as set forth in Claims 10 and 14.

Verreault failed to explicitly disclose wherein said redundant data is delayed by a predetermined number of data packets following said first series of data packets.

Chen explicitly disclosed such redundant data is delayed by a predetermined number of data packets following said first series of data packets *(see Fig.3: list of lost packets; and col.7 lines 24-45: Time Out Value is set for lost packets)*.

At the time of the invention, it would be obvious to a person of ordinary skill in the art to implement such redundant data is delayed by a predetermined number of data packets following said first series of data packets, as taught by *Chen* with *Verreault,* in a purpose of detecting lost packets in a communications network. The motivation for doing so would have been to provide efficiency and reliability in the transmission and display of multimedia files *(see Chen: col.7 lines 63-65)*. Therefore, it would have been obvious to combine *Chen* with *Verreault* in the invention as specified in the claim.

j) **In Regarding to Claims 16** and **17**: *Verreault* disclosed all aspects of these claims as set forth in Claims 10, 14 and 15.

Verreault failed to explicitly disclose wherein said data packets are comprise digital modem data, and wherein said delay is selected to accommodate expected packet loss and to provide acceptable delay.

Chen explicitly disclosed such data packets are comprise digital modem data, and wherein said delay is selected to accommodate expected packet loss and to provide acceptable delay *(see col.3 lines 59-63: digital data packets; and col.7 line 66-col.8 line 3: applications⁻ requires constant and minimum transmission delay at the expense of losing a small amount of packets)*.

At the time of the invention, it would be obvious to a person of ordinary skill in the art to implement such data packets are comprise digital modem data, and wherein said delay is selected to accommodate expected packet loss and to provide acceptable delay, as taught by *Chen* with *Verreault,* in a purpose of detecting lost packets in a communications network. The motivation for doing so would have been to provide efficiency and reliability in the transmission and display

of multimedia files *(see Chen: col.7 lines 63-65)*. Therefore, it would have been obvious to

combine *Chen* with *Verreault* in the invention as specified in the claims.

3.   **Claims 4** and **13** are rejected under 35 U.S.C. 103(a) as being unpatentable over   .

Verreault (US Patent No. **6,434,169**) in view of *Sullivan et al.* (US Patent No. **6,667,986**) and in

view of *Chen et al.* (US Patent No. **5,822,524**) as applied to 1-3, 5 and 7-12 above, and further in

view of *Barzegar et al.* (US Patent No. **6,347,075**) hereinafter referred to as *Barzegar*.

        a) **In Regarding to Claim 4**: *Verreault* disclosed all aspects of claim 4 as set forth in

Claims 1-3.

        Verreault failed to explicitly disclose said means for establishing optimal modulation and

rate parameters further includes:

        means for independent connection of said first and second modems if no commonly

supported data rate is determined.

        However, *in Fig.3, Verreault disclosed exchange parameter information (means) with*

terminals 44 and 46 respectively upon detection of a switch from voice to data at either end of

the network. For example, when terminal 44 initiates a modem call, relay 40 exchanges

parameter information with terminal 44 to ascertain a common set of parameters such as

supported data rate, modulator type and encoding. The modem relay 40 also advises modem

relay 41 that a data call is being directed to terminal 46. The modem relay 41 and terminal 46

then exchange parameter information and select a set of conditions supported by both. Upon

completion of this exchange, the modem relays 40 and 41 arrive at a set of conditions that can be

supported by both modems taking into account the rate employed by the network. Thus, for

example, if the terminal 44 can operate at 14.4 kbps but the modem relay 40 only supports 12

kbps, while terminal 46 can operate at 28.8 kbps and the modem relay 41 supports 14.4 kbps, the

two modem relays will agree on a rate of 12 kbps. However, if the rate is only 8 kbps, this

minimum rate will be indicated by the unit relays 40 and 41 during the exchange for the

communications between the terminals 44 and 46 (see col.4 lines 23-45). Hence, the

communication connection would be setup independently by modems and terminal in the both

sides of communications networks.

Barzegar explicitly disclosed such a means *(see col.2 lines 44-67: a server called an*

intelligent services director (ISD) provides multiple independent connections for telephones

which ordinarily connect to multiple access virtual circuits generated on the subscriber link over

a twisted pair)

At the time of the invention, it would be obvious to a person of ordinary skill in the art to

combine such a means for independent connection of said first and second modems if no

commonly supported data rate is determined, as taught by *Barzegar* with *Verreault,* so that a data

can be transmitted throughout a communication network in different rates without any affections.

The motivation for doing so would have been to support different data rates and save bandwidth.

Therefore, it would have been obvious to combine *Barzegar* with *Verreault* in the invention as

specified in the claim.

b) **In Regarding to Claim 13**: this claim is rejected for the same reasons as claim 4

because the apparatus in claim 4 can be used to practice the method steps of claim 13.

4.   **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over *Verreault* (US

Patent No. **6,434,169**) in view of *Sullivan et al.* (US Patent No. **6,667,986**) and in view of *Chen*

et al. (US Patent No. **5,822,524**) as applied to claim 5 above, and further in view of *Beighe et al.* (US Patent No. **5,912,896**) hereinafter referred to as *Beighe.*

Verreault disclosed all aspects of this claim as set forth in claim 5; and

Verreault further disclosed wherein each of said originating and said destination modem relay units include:

a modem driver connected to a modulated interface, and a modem relay protocol unit connected between said modem driver and said modem network driver, tracks modem control and state machine functions and provides modem data *(see Fig.5: block of V32 BIS modem relay state machine).*

Verreault failed to explicitly disclose each of said originating and said destination modem relay units include: a modem network driver connected to said digital network.

Beighe explicitly disclosed such a modem network driver *(see Fig.3: block 70)*

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a modem network driver, as taught by *Beighe* with *Verreault,* so that a data can be stored and forwarded throughout a communication network. The motivation for doing so would have been to make *Verreault* compatible and efficient. Therefore, it would have been obvious to combine *Beighe* with *Verreault* in the invention as specified in the claim.

Response to Remarks

5.   Applicant's arguments with respect to **claims 1-17** have been considered but are moot in view of the new ground(s) of rejection.

6.   In order to response properly to the independent amended claims, the Examiner decides

to add a new reference, *Chen et al.* (US Patent No. 5,822,524), which is a new discovered

reference. Therefore, new ground(s) rejections are applied as set forth in the Office Action.

Regarding to amended claims 1 and 10, the Applicants argue that the references of

Verreault and *Sullivan,* either individually or in combination, do not teach or suggest "wherein

said packets include redundant data upon the network packet loss". The Examiner respectfully

agrees with the Applicants on this argument. However, the new reference, *Chen et al.* explicitly

disclosed said packets include redundant data upon the network packet loss *(see Fig.3: list of lost*

packets; and col.7 lines 24-45: wherein the sequence number of a packet loss is redundant data).

7.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Examiner Information

8.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to **Anthony T Ton** whose telephone number is **571-272-3076**. The

examiner can normally be reached on M-F: 8:30 am - 5:00 pm.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, **Ken Vanderpuye** can be reached on **571-272-3078**. The fax phone number for the

organization where this application or proceeding is assigned is **703-872-9306**.

  Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be

obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Respectfully submitted,

by: _____
Anthony T. Ton
Patent Examiner
January 7, 2005

PHIRIN SAM
PRIMARY EXAMINER